

## Contribution to the knowledge of *Reynoldsia* Malloch (Diptera: Muscidae)

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*Abstract.* — Redescriptions are made of *Reynoldsia* Malloch and five species: *R. pectinata*, *R. brevitarsis*, *R. pteropleuralis*, *R. rufoapicata*, and *R. scutellata*. The morphology of the genital segments is described.

Malloch (1934) described and distinguished *Reynoldsia* from other Neotropical Coenosiniinae by the subquadrate head, pointed upper apex of the flagellomere, long proboscis, slender, long and slightly clavate palpus, and presence of 2 presutural dorsocentral bristles, among other characters. Malloch (1934) figured the “forceps and penis” (Fig. 41c) of *R. rufoapicata*, but no complementary description of the genital segments was included. Seven species were originally described in *Reynoldsia*, and Malloch (1934) transferred *Limnophora aurifera* Bigot to this genus. Pont (1972) doubtfully included one more species, *Coenosia robusta* Stein, in the genus.

This analysis is based on specimens in the Museu Nacional (Rio de Janeiro) collection and material recently collected by Dr. Stephen Marshall (University of Guelph, Ontario, Canada). Study of these specimens made it possible to add new knowledge of some species, particularly about the morphology of the male and female genitalia. Some notes made by the late Dr. Dalcy de Oliveira Albuquerque (+ 1982) during his study of types in the National Museum of Natural History (Washington, D.C.) were also used.

In this study, a full redescription of *Reynoldsia pectinata*, the type species, and comparative redescriptions of four other species are presented.

### *Reynoldsia* Malloch

*Reynoldsia* Malloch, 1934:210 [key], 230 [description]; Hennig, 1965:67 [citation]; Pont, 1972:36 [catalog]; Couri & Lopes, 1985:24 [key], Carvalho et al., 1993:132.

*Type species.* — *Reynoldsia pectinata* Malloch, 1934 (orig. desig.).

*Diagnosis.* — Eyes with or without small and sparse cilia; male dichoptic; head subquadrate in profile; epistome produced (Fig. 1); antenna with apex of flagellomere 1 acutely pointed; arista with very small cilia; palpus long, slender with slightly clavate apex. Prealar absent; scutellum bare below and laterally; prosternum bare; proepisternals 2; propleurals 2, directed upwards, posterior one about 2.5 times the length of other; katepisternals 1:1:1, forming equilateral triangle, lower calypter about 1.5–2.0 times as long as upper; dorsocentrals 2:3; wings with bare veins; veins R4 + 5 and M1 + 2 parallel at apex. Legs with claws and pulvilli well developed. Hind tibia with at least 2 anterodorsal and 2 posterodorsal bristles. Sternite I bare. Male: sternite V “U”-shaped (Fig. 6); cercal plate and surstyli strongly developed, elongate inferiorly (Figs. 7–8); hypopygium produced, phallic complex modified with elongate hypandrium (Fig. 9). Female: proboscis with haustellum partially sclerotized; prestomal teeth developed (Fig. 23); ovipositor long with microtrichia in all

segments; cerci long, surpassing hypoproct (Figs. 16–17). Egg: *Phaonia* type (Figs. 30–31).

*Comments.*—*Reynoldsia* is endemic to southern South America. Adults range in size from 7.0–9.0 mm. The arrangement of the katepisternal bristles in an equilateral triangle and the presence of microtrichiae at sternites VI and VII place this genus among the Coenosiinae, Coenosiini (sensu Carvalho 1989). This is probably a primitive Coenosiinae, as evidenced by an included species with a setulose anepimeron (*R. pteropleuralis*).

*Reynoldsia pectinata* Malloch

Figs. 1–10

*Reynoldsia pectinata* Malloch, 1934:230 [key], 235–236 [description ♂♀], 238 [Fig. 41a, mid femur ♂]; Pont, 1972:36 [catalog], Carvalho et al., 1993:132.

*Holotype.*—♂. Tierra del Fuego, Rio Grande (BMNH, London).

*Diagnosis.*—Frons brown, strongly silvery pollinose; antenna with flagellomere 1 about 1.8 as long as pedicel (Albuquerque's notes); acrostichal presutural bristles differentiated; brown vittae at acrostichal and intralar surfaces, the 2 intralar vittae reaching apex of scutellum; halter yellow with knob brown; hind femur at posteroventral surface with comb-like row of bristles at apical-3rd, more developed in male; hind tibia at anteroventral surface with 3 bristles at middle 3rd, the basal one weaker; abdomen grayish with lateral dark brown subtriangular spots in all tergites, so that they are largely shining black in center. Cercal plate fine (Fig. 7).

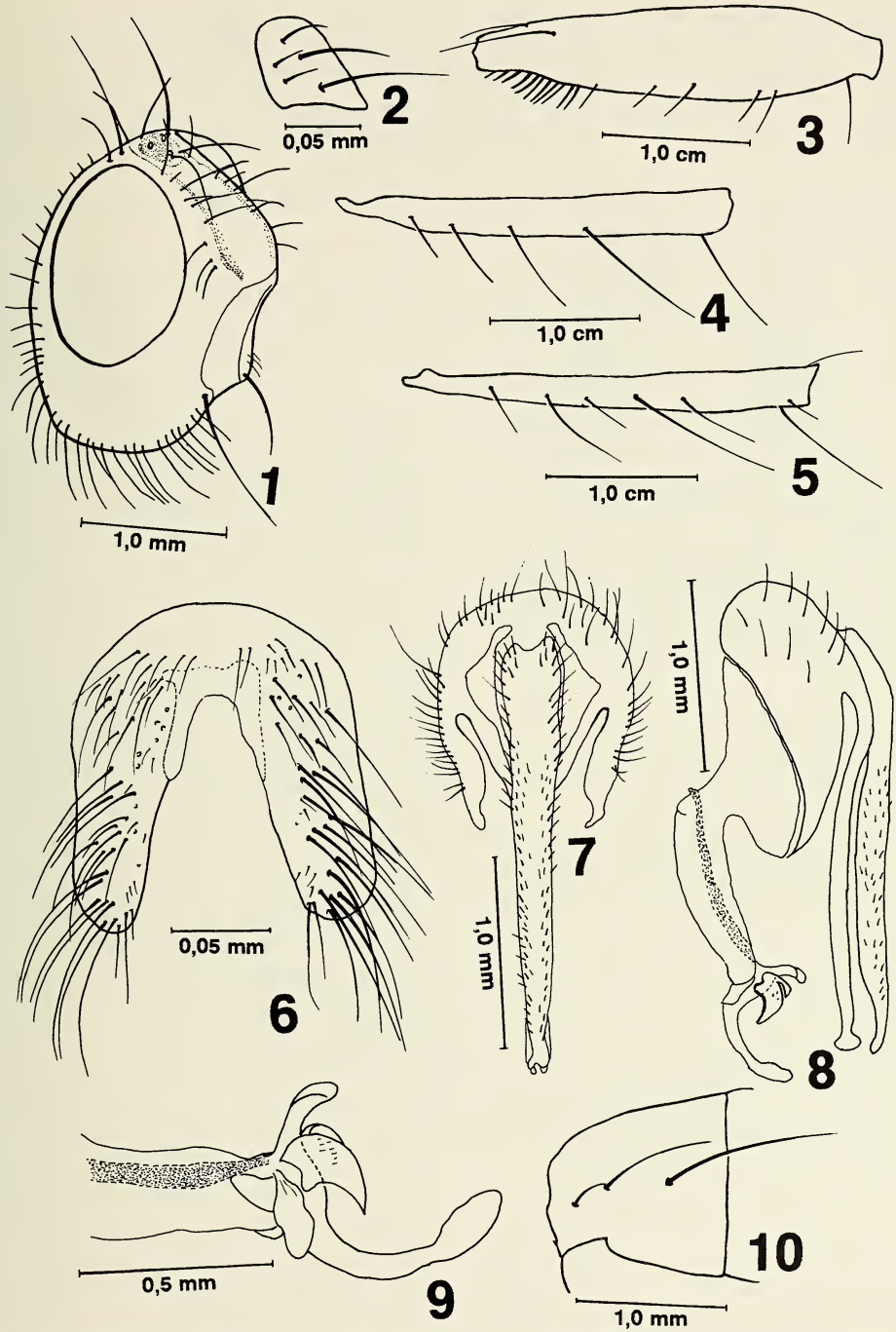
*Coloration.*—Parafacial, parafrontal, face, lunule and genae brown, strongly silvery pollinose. Gena reddish-brown. Ocellar triangle dark brown. Antenna, arista and palpus dark brown. Mesonotum brown, gray pollinose, and with 3 large brown vittae at acrostichal and intralar surfaces. Pleurae of same color of mesonotum. Calypter whitish. Halter yellow with knob brown. Legs

dark brown with apical 3rd or less of femora and entire tibiae yellow. Abdomen grayish pollinose as thorax, with lateral dark-brown sub-triangular spots in all tergites, so that they are largely shining black.

*Male.*—Body length 8.0 mm; wing length 7.0 mm.

*Head.*—(Fig. 1). Eyes with very small and sparse cilia. Eyes separated, at anterior ocelli level, by a space about 0.41 of head width. Frons with 6 pairs of long bristles. Inner vertical long, parallel and directed posteriorly, outer vertical shorter and divergent. Antenna broken in the examined specimen (flagellomere 1 about 1.8 length of pedicel—Albuquerque's notes).

*Thorax.*—Acrostichal presutural differentiated, irregular and long, in number of 4 in the observed specimen and a prescutelar pair; humerus with 5 bristles disposed as in Fig. 2; presuturals 1; supralar 1; post-supralar 2. Notopleuron with 2 similar bristles. Scutellum with a lateral and an apical pair of strong bristle. Fore femur at dorsal, posterodorsal, posteroventral and ventral surfaces with a row of bristles. Fore tibia at posterior surface with a median seta. Mid femur at anterior and anterodorsal surfaces with a row of bristles at basal  $\frac{2}{3}$ , anteroventral surface with a complete row of bristles, posterior surface with 2 preapical bristles, posteroventral surface with a comb-like row of bristles at apical 3rd (Fig. 3). Mid tibia at anterodorsal and posterior surfaces with 3 long bristles at middle 3rd, apical bristles at all surfaces, the anteroventral and posteroventral ones longer. Hind femur at anterodorsal, anterior, anteroventral, ventral and posteroventral surfaces with a row of bristles, the anterior one irregular. Hind tibia (Figs. 4–5) at anteroventral surface with 3 bristles at middle 3rd, the basal one weaker, anterodorsal surface with 4 bristles, posterodorsal surface with 5 bristles, the 2nd and the 4th longer, dorsal and posterodorsal surfaces with a preapical bristle, anterior surface with 3 apical bristles and ventral surface with one.



Figs. 1–10. *Reynoldsia pectinata*, ♂: 1. Head, profile; 2. Humerus, lateral view; 3. Femur II, posterior view; 4. Tibia III, anterior view; 5. Tibia III, posterior view; 6. Sternite V, dorsal view; 7. Cercal plate and surstyli, dorsal view; 8. Cercal plate, surstyli and phallic complex, lateral view; 9. Phallic complex, lateral view; 10. Prescutum,  $\frac{3}{4}$  view.

*Abdomen.*—Tergites I–IV with developed lateral bristles at disc and apex, tergite V with a complete row of bristles at disc and apex. Sternite V with bristles on disc, more numerous and longer at “U” arms (Fig. 6).

*Genitalia.*—Cercal plate fine (Fig. 7); aedeagal apodeme surpassing margin of hypandrium, distiphallus straight (Figs. 8–9).

*Material examined.*—Chile: 1 ♂, Punta Arenas, 31 Dec 1950, R. Bassiento (MNRJ).

*Comments.*—Albuquerque examined one male and two females from Punta de Arenas (31/XII/1950, R. Bassiento col.) and noted that each has three dorsocentral presutural bristles. This could complicate the generic diagnosis. In the specimen examined (probably the same male as studied by Albuquerque), the extra bristle is actually present but is much shorter than the others and not aligned with them (Fig. 10). I examined no females.

*Reynoldsia brevitarsis* Malloch

Figs. 11–15

*Reynoldsia brevitarsis* Malloch, 1934:231 [key]; 233–234 [description ♂♀]; Pont, 1972:36 [catalog], Carvalho et al., 1993: 132.

*Holotype.*—♂. Argentina, Lake Guitiérrez (BMNH, London).

*Diagnosis.*—Frons brown, silvery pollinose; antenna with flagellomere 1 about 2.7 length of pedicel; acrostichal presutural bristles not differentiated; mesonotum with brown vittae at acrostichal and intralar surfaces, the 2 lateral ones reaching apex of scutellum; halter yellow with knob yellowish brown; mid and hind femora at ventral surface with numerous long and fine bristles; hind femur at posteroventral surface without a comb-like row of bristles at apical 3rd; hind tibia at anteroventral surface with 2 bristles; abdomen grayish pollinose; tergites III–V with lateral quadrangular brown spots. Cercal plate large (Fig. 14)

Differs from *R. pectinata* as follows:

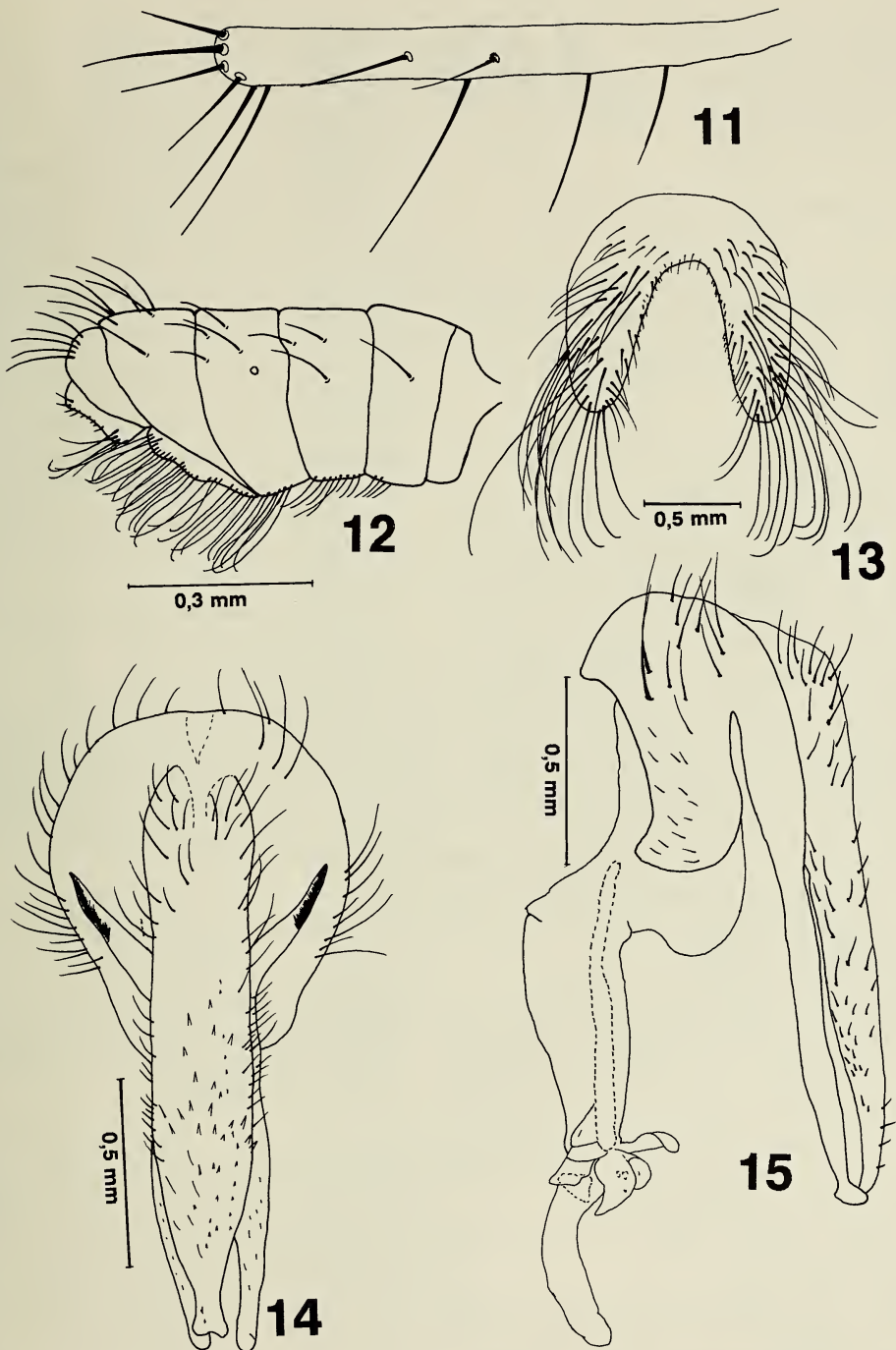
*Coloration.*—Mesonotum with faint brown vittae; halter yellow with knob yellowish brown; abdomen grayish pollinose; tergites III–V with lateral quadrangular brown spots.

*Male.*—Body length 7.0 mm; wing length 6.5 mm.

*Head.*—Eyes separated, at anterior ocelli level, by a space about 0.45 of head width. Frons with 5 pairs of long and strong bristles and with 4 intercalated fine, short ones. Antenna with flagellomere 1 about 2.7 times the length of pedicel.

*Thorax.*—Acrostichal presutural not differentiated; humerus with 3 long bristles disposed as an equilateral triangle. Mid and hind legs broken in the examined specimen. Adding Malloch's description, Albuquerque had written in his notes (legs of ♂ and ♀): mid femur at anterior surface with a row of bristles, a little beyond basal half and with a preapical one; anteroventral surface in females with a series of strong bristles at apical half, in males, anteroventral, ventral and posteroventral surfaces with a row of long and fine bristles, specially at base; posterior surface with 2 preapical bristles. Mid tibia at anterior surface with 3 bristles; postero-dorsal surface with 2–3 bristles at basal half. Hind femur at anterior surface with a row of bristles, more developed in females; anteroventral surface, in females, with a row of bristles; in males, anteroventral, ventral and posteroventral surfaces with long and fine bristles, specially at base; dorsal and posterior surfaces with an apical bristle. Hind tibia at anterodorsal and posterodorsal surfaces with 3 bristles each, inserted almost at same level, reaching a little more than basal half, anteroventral surface with 2 bristles. Dorsal, anterodorsal, anterior, and anteroventral surfaces with one apical bristle and ventral surface with 2 apical ones (Fig. 11, from Albuquerque's notes).

*Abdomen.*—Ventral surface, at apical half, specially sternite V with long and curled hairs (Figs. 12–13).



Figs. 11–15. *Reynoldsia brevitarsis*, ♂: 11. Tibia III, anterior view (from Albuquerque's notes, no scale); 12. Abdomen, lateral view; 13. Sternite V, dorsal view; 14. Cercal plate and surstyli, dorsal view; 15. Cercal plate, surstyli and phallic complex, lateral view.

*Genitalia.*—Cercal plate large (Fig. 14); distiphallus large (Fig. 15).

*Material examined.*—Argentina: 1 ♂, Bariloche, paratype no. 49875, Rio Negro, Nov 1926, R. & E. Shannon.

*Reynoldsia pteropleuralis* Malloch  
Figs. 16–18

*Reynoldsia pteropleuralis* Malloch, 1934:232 [key], 237–238 [description ♂♀], 238 [Fig. 41b: hind tibia, 41c: forceps and penis]; Pont, 1972:36 [catalog], Carvalho et al., 1993:132.

*Holotype.*—♀. Argentina. Lake Nahul Huapi (BMNH, London).

*Diagnosis.*—Frons brown, silvery pollinose; antenna with flagellomere 1 about 2.5 length of pedicel; acrostichal presutural bristles not differentiated; brown vittae at acrostichal and intralar surfaces, the 2 lateral ones reaching apex of scutellum; halter yellow with knob black; anepimeron with short cilia at disc; hind femur at posteroventral surface with a comb-like row of bristles at apical 3rd; hind tibia at anteroventral surface with 2 bristles at middle 3rd; abdomen grayish pollinose with lateral quadrate dark spots in all tergites. Sternite VII with a row of small spines (Figs. 16–17). Spermatheca as in Fig. 18.

Differs from *R. pectinata* as follows:

*Coloration.*—Parafacial, parafrontal, face, lunule, and genae brown, silvery pollinose. Halter brownish yellow with knob dark brown. Legs dark brown with apical half of femora and entire tibiae yellow. Abdomen grayish pollinose as thorax, with lateral quadrate dark spots in all tergites.

*Female.*—Body length 9.0 mm; wing length 7.5 mm.

*Head.*—Eyes separated, at anterior ocelli level, by a space about 0.38 of head width. Antenna with flagellomere 1 about 2.5 times length of pedicel.

*Thorax.*—Acrostichal presutural not differentiated, humerus with 3 bristles. Anepimeron with a few fine hairs at middle. Mid

femur at anterior surface with a row of bristles at basal half and one bristle inserted at apical 3rd, ventral surface with sparse long bristles at basal half, posterior surface with a complete row of bristles and with 2 preapical bristles. Mid tibia at anterodorsal surface with 3 long bristles at middle 3rd, posterior surface with 2 bristles at middle 3rd. Hind femur at anterodorsal and anteroventral surfaces with a row of long and sparse bristles. Hind tibia at anteroventral surface with 2 bristles at middle 3rd, anterodorsal and posterodorsal surfaces with 3 bristles at basal half, the anterior ones weaker.

*Abdomen.*—Tergites I–IV with developed lateral bristles at disc and apex.

*Genitalia.*—Epiproct with a reentrance on basal margin; sternite VII with a row of small spines (Figs. 16–17).

*Material examined.*—Argentina: 1 ♀, San Martin de los Andes, 1900 m, 28 Dec 1989. S. A. Marshall.

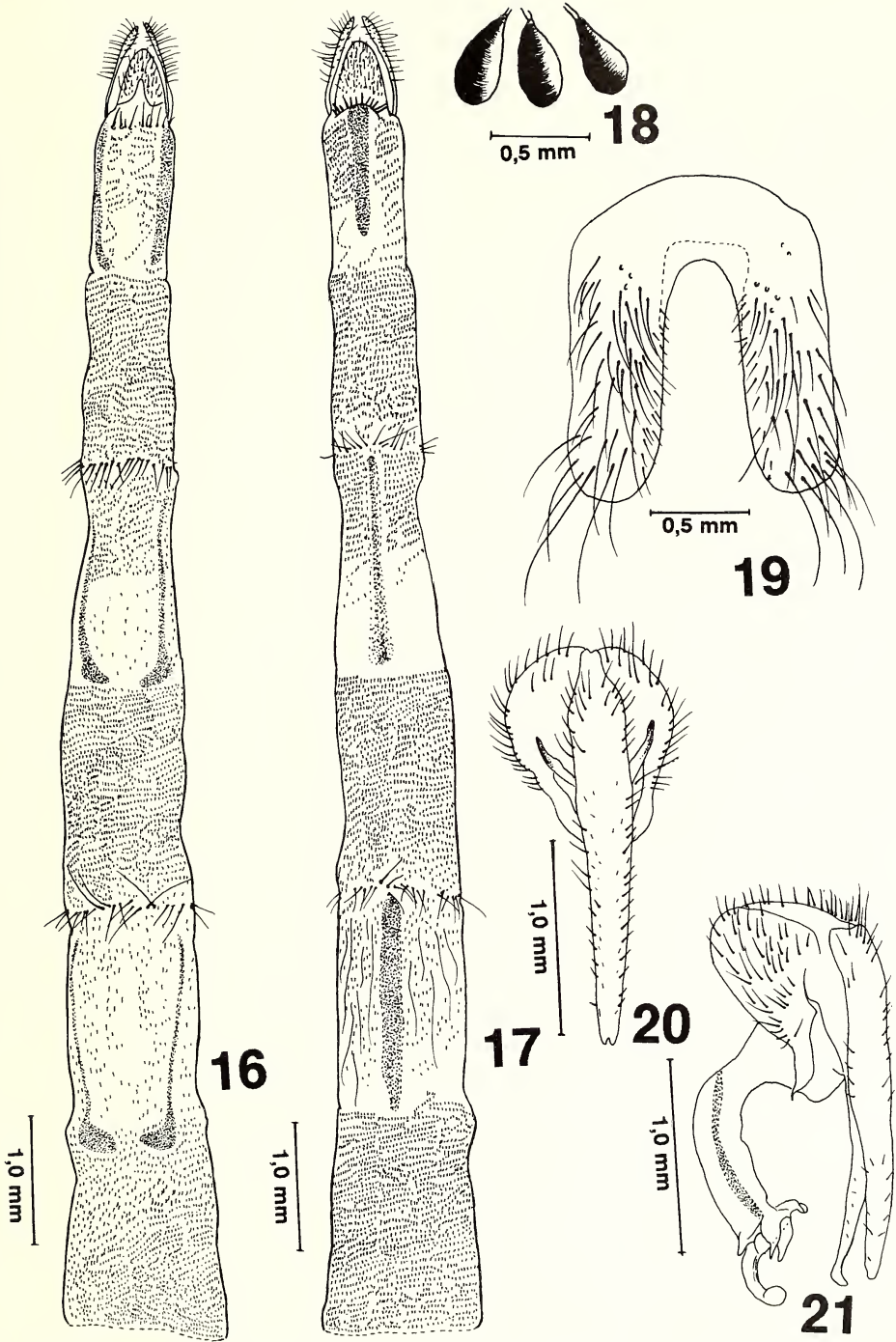
*Comments.*—Malloch (1934: 238, Fig. 41c) noted the peculiar male hypopygium, a character that should distinguish this species from its congeners. The modification of male phallic complex, however, is found in all studied species.

*Reynoldsia rufoapicata* Malloch, 1934  
Figs. 19–26

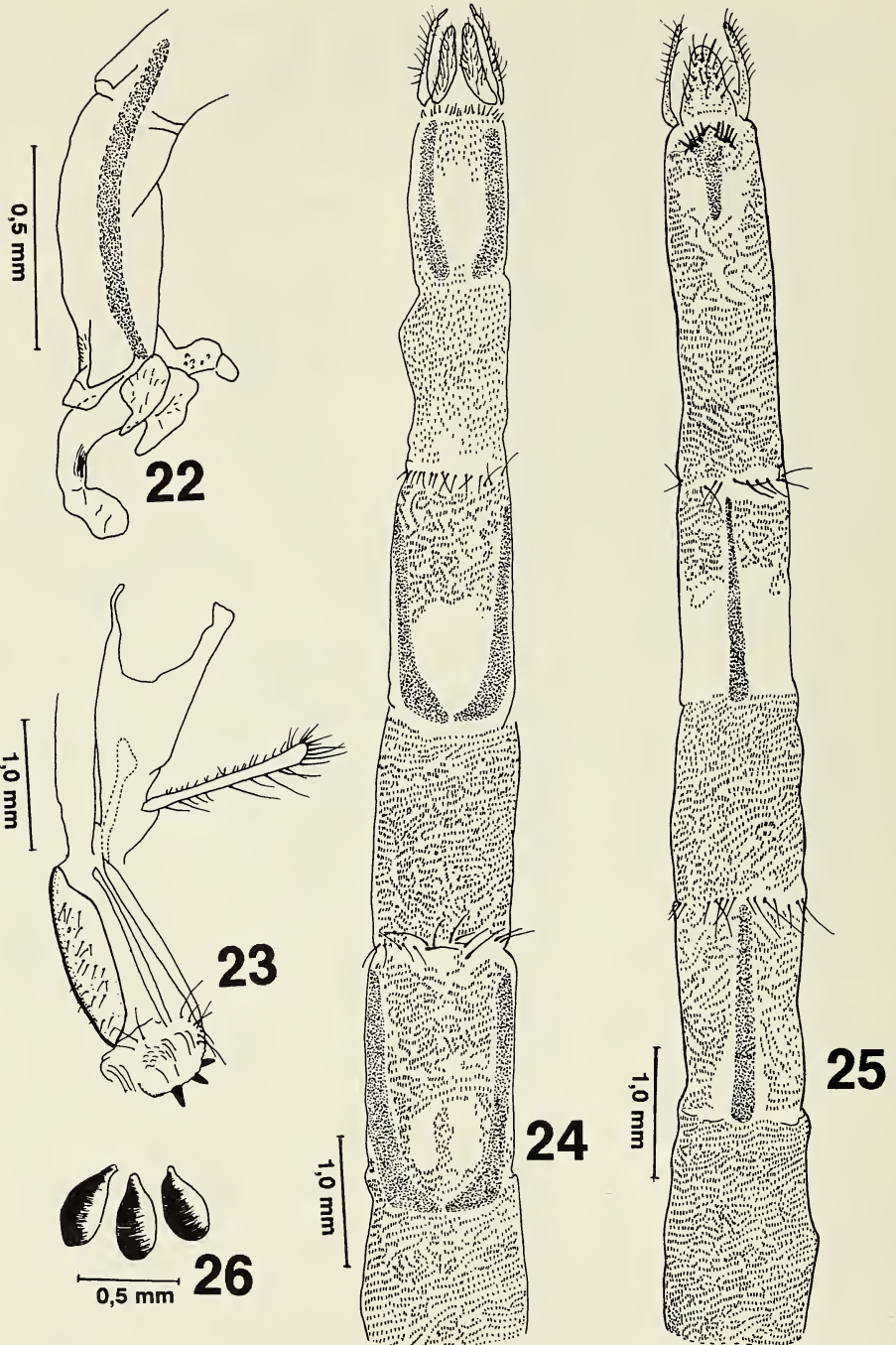
*Reynoldsia rufoapicata* Malloch, 1934:231 [key], 239 [description ♂♀], 238 [Fig. 41d: hind tibia]; Pont, 1972:36 [catalog], Carvalho et al., 1993:133.

*Holotype.*—♂. Argentina. Bariloche (USNM, Washington).

*Diagnosis.*—Frons dark, with whitish-gray or brownish-gray dust; antenna with flagellomere 1 about 2.0 length of pedicel; acrostichals presutural bristles differentiated; brown vittae at acrostichals and intralar surfaces, the 2 lateral ones reaching apex of scutellum; halter yellow with knob black; hind femur at posteroventral surface without a comb-like row of bristles at apical 3rd; hind tibia at anteroventral surface with 2



Figs. 16–21. *Reynoldsia pteropleuralis*, ♀: 16. Ovipositor, dorsal view; 17. Ovipositor, ventral view; 18. Spermatheca. *Reynoldsia rufoapicata*, ♂ and ♀: 19. Sternite V, dorsal view; 20. Cercal plate and surstyli, dorsal view; 21. Cercal plate, surstyli and phallic complex, lateral view.



Figs. 22–26. *Reynoldsia rufoapicata*, ♂ and ♀: 22. Phallic complex, lateral view; 23. Proboscis, ♀; 24. Ovipositor, dorsal view; 25. Ovipositor, ventral view; 26. Spermatheca.



bristles at middle 3rd; abdomen black, lateral spots more visible in female.

Differs from *R. pectinata* as follows:

*Coloration*.—Parafacial, parafrons, face, lunule and genae brown, gray pollinose. Legs dark brown with apical 3rd of femora and entire tibiae yellow. Abdomen black, lateral spots more visible in female.

*Male*.—Body length 8.0 mm; wing length 7.5 mm.

*Head*.—Eyes separated, at anterior ocelli level, by a space about 0.40 of head width. Frontal row with 8 long pairs of bristles. Antenna with flagellomere 1 about 2.0–2.1 times length of pedicel.

*Thorax*.—Mid femur at anterior surface with a row of bristles at basal  $\frac{2}{3}$  and one at apical 3rd, anteroventral surface with a row of bristles at basal half, posterior surface with 2 preapical bristles. Mid tibia at anterodorsal surface with 3 long bristles at middle 3rd, posterior surface with 2 bristles at middle 3rd. Hind femur at anterior surface with 3 bristles at middle 3rd, anterodorsal surface with a complete row of bristles, anteroventral surface with a row of bristles at basal  $\frac{2}{3}$  and one bristle at apical 3rd. Hind tibia at anterodorsal and posterodorsal surfaces with 3 bristles at middle 3rd, anteroventral surface with 2 bristles at middle 3rd.

*Abdomen*.—Sternite V with anterior concavity deep (Fig. 19).

*Genitalia*.—Cercal plate straight; surstyli longer than cercal plate (Figs. 20, 21, and 22).

*Female*.—Body length 7.0 mm; wing length 8.0 mm. Similar to male.

*Genitalia*.—Epiproct completely divided; sternite VII with row of short spines in each side (Figs. 24–25). Spermatheca as in Fig. 26.

*Material examined*.—Argentina: 6 ♂, 3 ♀, San Martin de los Andes, slope of Cerro Chapelco, 1,500 m, 28 Nov 1989. S. A. Marshall (MNRJ).

*Comments*.—Malloch (1934) stated that

this species is very similar to *R. pectoralis*, differing mainly in the lack of pteropleural hairs, coloration on apex of femora and the apical bristling of hind tibia.

#### *Reynoldsia scutellata* Malloch

*Reynoldsia scutellata* Malloch, 1934:232 [key], 234–235 [description ♀]; Pont, 1972: 36 [catalog], Carvalho et al., 1993:133.

*Holotype*.—♂. Argentina, Puerto Blest (BMNH, London).

*Diagnosis*.—Frons brown, brown dusted; antenna with flagellomere 1 about 3.0 times length of pedicel; acrostichals presutural bristles differentiated; brown vittae at acrostichals and intralar surfaces, none of them reaching scutellum, which is uniformly brownish-gray; halter brownish-yellow; trochanters yellow; hind femur at posteroventral surface without a comb-like row of bristles at apical 3rd; hind tibia at anteroventral surface with 1 bristle at middle 3rd; abdomen grayish with lateral dark-brown subtriangular spots in all tergites.

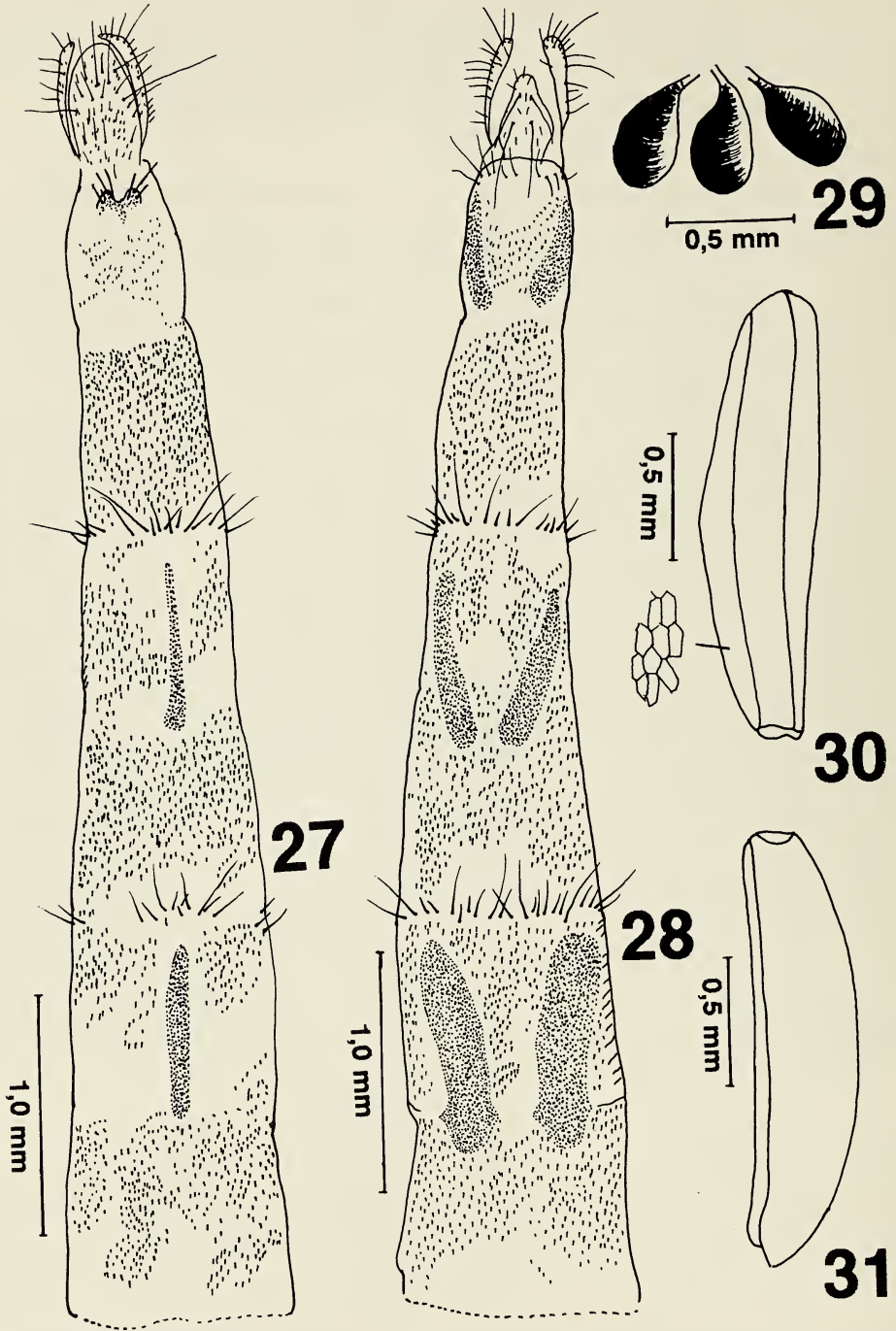
Differs from *R. pectinata* as follows:

*Coloration*.—Parafacial, frons and lunule brownish yellow. Parafacial and gena silvery pollinose. Gena brown at vibrissal level. Mesonotum with the lateral brown vittae not continuing to scutellum, which is entirely brownish gray. Halter brownish-yellow. Trochanters yellow. Abdomen gray, tergites III and IV with very faint lateral brown spots.

*Female*.—Body length 7.0 mm; wing length 6.5 mm.

*Head*.—Eyes separated by a space about 0.55 of head width, at anterior ocelli level.

*Thorax*.—Humerus with 2 bristles, the outer one longer. Fore femur at posterodorsal and posteroventral surfaces with a row of bristles. Fore tibia at posterior surface with a median bristle. Mid femur at anterior surface with 4 sparsely bristles at basal half, ventral surface with 3 bristles at



Figs. 27-31. *Reynoldsia trochanterata*, ♀. 27. Ovipositor, dorsal view; 28. Ovipositor, ventral view; 29. Spermatheca; 30. Egg; 31. Egg, lateral view.

basal 3rd, the last one longer, one median bristle and a row of short bristles at apical 3rd. Mid tibia at anterodorsal surface with 2 bristles at middle 3rd, apical bristles at anteroventral and posteroventral surfaces long. Hind femur at anterodorsal, anterior, anteroventral, ventral and posteroventral surfaces with a row of bristles, the anterior one irregular. Hind tibia at anteroventral surface with 3 bristles at middle 3rd, the basal one weaker, anterodorsal surface with 4 bristles, posterodorsal surface with 5 bristles, the 2nd and the 4th longer, dorsal and posterodorsal surfaces with a preapical bristle, anterior surface with 3 apical bristles and ventral surface with one.

*Genitalia.*—Ovipositor not so long as in the other species; tergites larger (Figs. 27–28). Spermatheca as in Fig. 29. Egg as in Figs. 30 and 31.

*Material examined.*—Chile: 1 ♀, Cerros de Nahuelbuta, Angol 650 m, 12 Oct 1931, D. S. Bullock (MNRJ).

*Comments.*—Malloch's (1934) descriptions of *R. scutellata* and *R. trochanterata* are very similar. Both species have yellow trochanters and a uniformly colored scutellum, which are diagnostic characters to Malloch (1934). A more detailed analysis of the types could clarify if they are really synonyms.

### Acknowledgments

I am grateful to Dr. Stephen Marshall (University of Guelph, Ontario) for the donation of specimens to the Museu Nacional, Rio de Janeiro, and to Dr. Raymond Gagné (Systematic Entomology Laboratory, Department of Agriculture, Washington, D.C.) for suggestions and comments.

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